

## REMARKS

This paper is responsive to the Office Action dated May 27, 2005.

The Examiner's acknowledgement that applicant's prior response overcome the objections to the drawings, specification, and claims 8-12, as well as the rejections under 35 USC §112 of claims 10-12 and 2-7 is noted with appreciation.

The Examiner has maintained the rejections of all of the claims based upon prior art. Applicants believe the rejection is improper, and respectfully traverse based upon the amendment presented herein as well as the explanation set forth below.

The Examiner indicates that the prior art rejections have not been overcome. Specifically, the Examiner has rejected claims 10-12 under 35 USC §102 over Yang. Applicants respectfully traverse this rejection, and state that the Examiner has not appreciated the definition of DFA vector provided by the applicant.

Claim 10 as drafted specifically requires that the face and non-face classes are calculated only after first calculating the DFA vector of each of a plurality of training images. The examiner's citation to Yang as teaching the DFA vector is misplaced. As explained for example, at section 3.1 of the specification, applicant's DFA vector is a unique and specific vector that includes the input image, the 1-D Haar representation thereof, and its amplitude projections.

The Examiner cites the left column of page 43 of Yang and page 44 thereof, which admittedly discusses the representation of an image as a vector. The Examiner states at page 2 of the action that "Because each pixel contributes in discriminating a face from a nonface, each pixel data is a discriminating feature." This statement ignores applicant's specification and sets forth a different definition of DFA. Applicant has stated a particular definition of a DFA vector in the specification,

as recited above. It is not the definition proposed by the Examiner, and the claim requires the DFA defined in applicant's specification. In short, applicant readily acknowledges that he is not the first to represent an image as a vector for purposes of performing face detection, and that Yang so teaches. Yang, however, does not teach the DFA vector.

With regard to claims 13-16, applicant has amended these claims such that each requires at least two of the three features present in a DFA vector as discussed above. Applicant submits that the Sung reference does not disclose the use of these features to represent an image for face class and non face class modeling. Applicant's respectfully submit that with regard to this rejection, the Examiner is improperly assuming that the claims cover *any* vector representation of an image for face detection. This is simply not the case, as applicants present claims are directed to a vector comprised of specific parameters as discussed above.

Additionally, while the remaining dependant claims are patentable at least for the reasons that parent claim 13 is patentable, claim 16 defines further parameters that are not disclosed as useful for calculating the face and non face classes in either Sung or Go. Specifically, nether reference discloses using an input image, a mean nonface value, and eigenvalues of the nonface classes in combination to represent an image for purposes of detecting the face and non faces. Turning to paragraphs 14-15 of the action, the Examiner has additionally rejected claims 1-7 under 35 USC §103 as being obvious over Yang in view of Go. As explained above, Yang does disclose a vector representation of an image, but it does not disclose the use of a vector that utilizes the 1-D Haar wavelet transformation, the amplitude projections, and the input image. Go adds nothing more about these features, but simply teaches a representation of an image using an equation that appears similar to that shown in applicant's original specification. Go does not teach the combination of the three items in applicant's DFA vector for detecting faces.

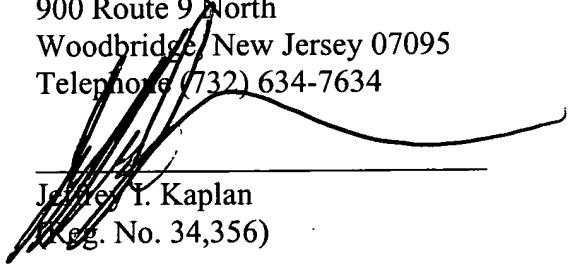
With respect to the Examiner's Election/restriction, applicant will determine at a later time whether to prosecute the withdrawn claims in a separate application, but for now has cancelled them without prejudice. This renders moot the Examiner's objection to the drawings in part 9 of the action.

The applicants therefore respectfully request reconsideration and allowance in view of the above remarks and amendments. The Examiner is authorized to deduct additional fees believed due from our Deposit Account No. 11-0223.

Respectfully submitted,

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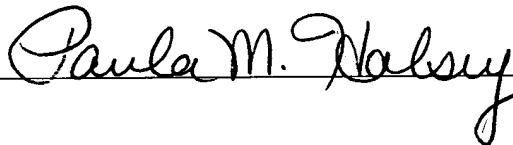
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I hereby certify that this correspondence is being deposited with the United States Postal service as first class mail, in a postage prepaid envelope, addressed to Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on August 29, 2005.

Dated August 29, 2005

Signed



Print Name Paula M. Halsey